We claim:

1. A method of electroforming tissue comprising:

creating stress in the tissue; and

causing a current to flow in the tissue while the created stress is present to change shape of the tissue or material parameters of the tissue.

2. The method of claim 1 where causing a current to flow in the tissue comprises causing a direct current of a predetermined polarity to flow in the tissue to mediate the tissue.

3. The method of claim 1 where creating stress in the tissue comprises mechanically applying force to the tissue to create external stresses applied to the tissue.

4. The method of claim 1 where creating stress in the tissue comprises changing material parameters of the tissue to create internal stresses in the tissue.

5. The method of claim 4 where changing material parameters of the tissue comprises causing a current to flow in the tissue.

6. The method of claim 1 further comprising monitoring the stresses in the tissue and controlling the current flowing in the tissue according to the stresses therein.

7. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring impedance of the tissue.

8. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring optical properties of the tissue.

9. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring pH of the tissue.

10. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring gas formation in the tissue.

11. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring acoustic properties of the tissue.

12. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring color of the tissue as caused by a chemical dye disposed therein.

13. The method of claim 6 where monitoring the stresses in the tissue comprises monitoring color of the tissue as caused by electroplating a material thereon.

14. The method of claim 1 where causing a current to flow in the tissue comprises applying a current of predetermined polarity to obtain a predetermined bioeffect.

15. The method of claim 14 where applying a current of predetermined polarity to obtain a predetermined bioeffect comprises applying pulses of current of the same polarity to form a DC pulse train.

16. The method of claim 14 where applying a current of predetermined polarity to obtain a predetermined bioeffect comprises applying a first sequence of pulses of current of the same polarity and applying a second sequence of pulses of current of the opposite polarity to form a complex DC pulse train

17. The method of claim 16 where applying the first and second sequence of pluses provides a net charge cancellation when integrated over an application time.

18. The method of claim 14 where applying a voltage of predetermined polarity to obtain a predetermined bioeffect comprises flowing current from a positive electrode to obtain tissue compression in the proximity of the positive electrode.

19. The method of claim 14 where applying a voltage of predetermined polarity to obtain a predetermined bioeffect comprises flowing current from a negative electrode to obtain tissue lengthening in the proximity of the negative electrode.

20. The method of claim 1 where creating stress in the tissue comprises creating tension in the tissue.

21. The method of claim 1 where creating stress in the tissue comprises creating compression in the tissue.

22. The method of claim 1 where creating stress in the tissue comprises creating shear stress in the tissue.

23. The method of claim 1 where causing a current to flow in the tissue comprises applying a DC voltage for a predetermined application time across two paired conductive elements in contact with the tissue.

24. The method of claim 23 where applying a DC voltage for a predetermined application time across two paired conductive elements comprises placing a solid conductive element in contact with the tissue, including solid conductive elements composed of metals or conductive polymers.

25. The method of claim 23 where applying a DC voltage for a predetermined application time across two paired conductive elements comprises placing a conductive gel or solution in contact with the tissue.

26. The method of claim 23 where applying a DC voltage for a predetermined application time across two paired conductive elements comprises penetrating the tissue with at least one conductive needle as providing contact with one of the pair of electrodes.

27. The method of claim 23 where applying a DC voltage for a predetermined application time across two paired conductive elements comprises contacting the tissue with an array of point contacts or penetrating needles.

28. The method of claim 1 where creating stress in the tissue and causing a current to flow in the tissue comprises contacting the tissue with a pair of curved electrodes.

29. The method of claim 28 where contacting the tissue with a pair of curved electrodes comprises contacting the tissue with a sharply angled electrode.

30. The method of claim 28 where contacting the tissue with a pair of curved electrodes comprises contacting the tissue with a smoothly angled electrode.

31. A method of electroforming cartilage comprising:

mechanically inducing a predetermined desired shape of the cartilage;

applying electrical energy to cartilage to cause electrolytic conduction of current through the cartilage for a predetermined application time while mechanically maintaining the predetermined desired shape; and

ceasing the application of electrolytic conduction of current through the cartilage and freeing the cartilage from mechanical shaping.

32. The method of claim 31 where electrolytic conduction of current is limited to provide a substantially nonthermal method.

33. The method of claim 31 where applying electrical energy to cartilage causes cartilage shaping to occur through electroplating, electrophoresis, protein denaturation, action- local mineralization, water flow, transitions of bound to free water, electrolysis of water, pH change or combinations thereof.

34. The method of claim 31 where applying electrical energy to cartilage is by means of a DC voltage being applied across a pair of electrodes, which causes cartilage shaping to occur through molecular dissociation of the components of the cartilage in the vicinity of the electrodes which in turn induces volumetric molecular reorganization within the tissue.

35. An apparatus of electroforming tissue comprising:

means for creating stress in the tissue; and

means for causing a current to flow in the tissue while the created stress is present to change shape of the tissue or material parameters of the tissue.

36. The apparatus of claim 35 where the means for causing a current to flow in the tissue comprises means for causing a direct current of a predetermined polarity to flow in the tissue to mediate the tissue.

37. The apparatus of claim 35 where the means for creating stress in the tissue comprises means for mechanically applying force to the tissue to create external stresses applied to the tissue.

38. The apparatus of claim 35 where the means for creating stress in the tissue comprises means for changing material parameters of the tissue to create internal stresses in the tissue.

39. The apparatus of claim 38 where the means for changing material parameters of the tissue comprises means for causing a current to flow in the tissue.

40. The apparatus of claim 35 further means for comprising monitoring the stresses in the tissue and means for controlling the current flowing in the tissue according to the stresses therein.

41. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring impedance of the tissue.

42. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises monitoring optical properties of the tissue.

43. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring pH of the tissue.

44. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring gas formation in the tissue.

45. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring acoustic properties of the tissue.

46. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring color of the tissue as caused by a chemical dye disposed therein.

47. The apparatus of claim 40 where the means for monitoring the stresses in the tissue comprises means for monitoring color of the tissue as caused by electroplating a material thereon.

48. The apparatus of claim 35 where the means for causing a current to flow in the tissue comprises means for applying a voltage of predetermined polarity to obtain a predetermined bioeffect.

49. The apparatus of claim 48 where the means for applying a current of predetermined polarity to obtain a predetermined bioeffect comprises means for applying voltage pulses of the same polarity to form a DC pulse train.

50. The apparatus of claim 49 where the means for applying a voltage of predetermined polarity to obtain a predetermined bioeffect comprises means for applying a first sequence of voltage pulses of the same polarity and means for applying a second sequence of voltage pulses of the opposite polarity to form a complex DC pulse train.

51. The apparatus of claim 50 where the means for applying a first sequence and means for applying a second sequence of voltage pulses provide a net charge cancellation when integrated over an application time.

52. The apparatus of claim 49 where the means for applying a voltage of predetermined polarity to obtain a predetermined bioeffect comprises means for flowing current from a positive electrode to obtain tissue compression in the proximity of the positive electrode.

53. The apparatus of claim 49 where the means for applying a voltage of predetermined polarity to obtain a predetermined bioeffect comprises means for flowing current from a negative electrode to obtain tissue lengthening in the proximity of the negative electrode.

54. The apparatus of claim 35 where the means for creating stress in the tissue comprises creating means for tension, compression, shear or combinations thereof in the tissue.

55. The apparatus of claim 35 where the means for causing a current to flow in the tissue comprises means for applying a DC voltage for a predetermined application time across two paired conductive elements in contact with the tissue.

56. The apparatus of claim 55 where the means for applying a DC voltage for a predetermined application time across two paired conductive elements comprises means for placing a solid conductive element in contact with the tissue, including solid conductive elements composed of metals or conductive polymers.

57. The apparatus of claim 55 where the means for applying a DC voltage for a predetermined application time across two paired conductive elements comprises means for placing a conductive gel or solution in contact with the tissue.

58. The apparatus of claim 55 where the means for applying a DC voltage for a predetermined application time across two paired conductive elements comprises means for penetrating the tissue with at least one conductive needle as providing contact with one of the pair of electrodes.

59. The apparatus of claim 55 where the means for applying a DC voltage for a predetermined application time across two paired conductive elements comprises means for contacting the tissue with an array of point contacts.

60. The apparatus of claim 35 where the means for creating stress in the tissue and the means for causing a current to flow in the tissue comprises means for contacting the tissue with a pair of curved electrodes.

61. The apparatus of claim 60 where the means for contacting the tissue with a pair of curved electrodes comprises means for contacting the tissue with a sharply angled electrode.

62. The apparatus of claim 60 where the means for contacting the tissue with a pair of curved electrodes comprises means for contacting the tissue with a smoothly angled electrode.

63. An apparatus of electroforming cartilage comprising:

means for mechanically inducing a predetermined desired shape of the cartilage;

means for applying electrical energy to cartilage to cause electrolytic conduction of current through the cartilage for a predetermined application time while mechanically maintaining the predetermined desired shape; and

means for ceasing the application of electrolytic conduction of current through the cartilage and freeing the cartilage from mechanical shaping.

64. The apparatus of claim 63 where the means for applying electrical energy is limited to provide a substantially nonthermal current.

65. The apparatus of claim 63 where the means for applying electrical energy to cartilage causes cartilage shaping to occur through electroplating.

66. The apparatus of claim 63 where the means for applying electrical energy to cartilage causes cartilage shaping to occur through electrophoresis.

67. The apparatus of claim 63 where the means for applying electrical energy to cartilage causes cartilage shaping to occur through protein denaturation.

68. The apparatus of claim 63 where the means for applying electrical energy to cartilage causes cartilage shaping to occur through a combination of electroplating, electrophoresis, and/or protein denaturation.

69. The apparatus of claim 63 where the means for applying electrical energy to cartilage is by means of a DC voltage being applied across a pair of electrodes, which causes cartilage shaping to occur through molecular dissociation of the components of the cartilage in the vicinity of the electrodes which in turn induces volumetric molecular reorganization within the tissue.

70. An apparatus of electroforming tissue comprising:

at least one electrode to couple a DC current or electric field into the tissue to change shape of the tissue or to change material parameters of the tissue; and

a mechanical instrument to apply stress to the tissue while the electrode couples current into the tissue, or to carry the at least one electrode while it couples current to the tissue to change material parameters of the tissue.

71. The apparatus of claim 70 where the apparatus is ambulatory to allow treatment over an extend period of time.

72. The apparatus of claim 70 where the tissue is cartilage anatomically positioned in the ear, nose or throat.

73. The apparatus of claim 70 where the electrode is in the form of a sheet, or a plurality of dots, wires, strips, or needles.